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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David R. Ohm

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03/30/2006

BERKELEY LAW & TECHNOLOGY GROUP

1700NW 167TH PLACE

SUITE 240

BEAVERTON, OR 97006

EXAMINER

CONNELLY CUSHWA, MICHELLE R

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/087,878	Applicant(s) OHM, DAVID R.	
	Examiner Michelle R. Connelly-Cushwa	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

Applicant's Amendment filed January 11, 2005 has been fully considered and entered.

The objections to the specification set forth in the previous Office action are withdrawn in view of Applicant's Amendments to the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 10, 14, 16-24, 30, 32 and 34 are rejected under 35

U.S.C. 102(b) as being anticipated by Tabuchi (US 5,611,006).

Regarding claims 1, 2, 18, 19, 22, 23 and 30; Figures 2 and 6 of Tabuchi discloses a method of and a photonic package for monitoring a semiconductor light source (20), the package comprising:

- a housing (10);
- a semiconductor light source (20) within the housing (10), the semiconductor light source (20) having a first light beam output having data encoded thereon (see column 8, lines 46-59);
- a cleaved optical isolator structure (26 and 18; see column 8, line 66, through column 9, lines 42) optically coupled to the semiconductor light

source (20), the optical isolator structure including a beam splitter cube (18);

- the beam splitter cube, BSC (18), disposed inside the housing to create a first split output of the light beam output, the BSC (18) having a light beam splitting characteristic that negatively impacts the encoding of the data in the first light beam within a predetermined limited threshold (i.e. the BSC reflects a portion of the light beam and transmits the remainder);
- a photodetector (21) disposed inside the housing (10) to receive the first split output, with the photodetector (21) being adapted to determine the properties of the first split output notwithstanding the first split output being created in the limited impact manner, and wherein the photodetector (21) produces an electrical signal responsive to the received first split output to facilitate monitoring of the semiconductor light source (see column 8, lines 46-59; column 9, lines 20-42; and Figures 1-6, especially Figure 6);
- a first lens (16b) optically coupled to the semiconductor light source (20), the first lens (16b) equipped to collimate the first light beam output;
- a second split output of the first light beam output created by the BSC (18); and

- a second lens (16d) optically coupled to the BSC (18) and an optical fiber (23), the second lens (16d) equipped to focus the second split output to the optical fiber (23).

Regarding claims 5 and 24; the semiconductor light source (20) is a semiconductor laser diode chip.

Regarding claims 10 and 32; the predetermined limited threshold comprises the first split output being a portion or a percentage of the first light beam output (i.e. the BSC creates a first split output that is a portion or a percentage of the first light beam output and directs that portion to photodetector 21).

Regarding claim 14; the photodetector (21) is a photodiode.

Regarding claims 16, 17, 20 and 21; in Figure 6, Tabuchi discloses that the package may further comprise a processor (31) to receive electrical signals from the photodetector (21); wherein the processor (31) must inherently comprise a processor having at least access to characterization data to facilitate calibration of the received first split output, so that the connected power control (33) may send an appropriate signal to the light source drive (30) in response to the received first split output to stabilize the light source (20).

Regarding claim 34; Tabuchi discloses that the method may further include receiving the electrical signal responsive to the received first split output at a processor (IC's 31, 33 and 30 illustrated in Figure 6 and discussed in column 9, lines 20-42).

Claims 1, 5, 7-10, 12-15, 18, 22, 24, 26, 27 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Spaeth (US 6,021,238).

Regarding claims 1, 18 and 22; Figure 1 of Spaeth discloses a method of and photonic package for monitoring a semiconductor light source, the package comprising:

- a housing (34, 35);
- a semiconductor light source (2) disposed within the housing (34, 35), the semiconductor light source (2) having a first light beam output at a beam-exit surface (11), the first light beam output having data encoded thereon;
- a beam splitter cube (4, 14) disposed inside the housing to create a first split output of the first light beam output, the BSC (4, 14) having a light beam splitting characteristic that negatively impacts the encoding of the data in the first light beam within a predetermined limited threshold (see column 7, lines 38-40); and
- a photodetector (21) disposed inside the housing (34, 35) to receive the first split output with the photodetector (21) being adapted to determine properties of the first split output notwithstanding the first split output being created in the limited impact manner, wherein the photodetector produces an electrical signal responsive to the received first split output to facilitate monitoring of the semiconductor light source;
- wherein the beam splitter cube (4, 14) may include a WDM filter and WDM filters are optical isolators, and, thus, the package may further

comprise an optical isolator that includes a beam splitter cube (see column 8, lines 6-20).

Regarding claims 5 and 24; the semiconductor light source (2) is a semiconductor laser.

Regarding claims 7-9, 26 and 27; the BSC (4, 14) comprises a nonpolarizing dielectric BSC including first and second right angle prisms (15, 16) adhesively joined at the hypotenuse, and the BSC comprises a dielectric material to create the first split output (see column 8, lines 6-20).

Regarding claims 10 and 32; the predetermined limited threshold comprises the first split output being a portion or a percentage of the first light output beam (see column 7, lines 38-40).

Regarding claims 12 and 13; the BSC may be made of borosilicate glass (see column 9, lines 6-20) and BK7A is high quality borosilicate glass.

Regarding claims 14 and 15; the photodetector comprises a p-i-n junction photodiode (see column 7, lines 51-59).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spaeth (US 6,021,238) in view of Asakura et al. (US 6,496,623 B2).

Regarding claims 3 and 4; Spaeth discloses all of the limitations of claims 3 and 4 as applied to claim 1 above, except for specifically stating that the BSC can be incorporated with an electro-optic modulator or that the BSC comprises a cleaved yttrium-iron garnet (YIG) type crystal. Spaeth teaches that the BSC (14) is formed from known materials and that the BSC may be a known WDM filter (see column 8, lines 6-20), wherein WDM filters are isolators. Asakura et al. teaches a BSC (6) that may be formed of YIG to create an optical isolator (WDM filter) having a photo-electro-magnetic effect. Spaeth does not suggest that a specific WDM filter be incorporated in the invention, thus suggesting to one of ordinary skill in the art that any known BSC that operates as a WDM filter may be incorporated. Therefore, one of ordinary skill in the art would have found it obvious to incorporate the BSC taught by Asakura et al., which is formed from YIG and has an electro-optic effect in the invention of Spaeth, as the WDM filter (isolator) BSC.

Claims 6 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabuchi (US 5,611,006) in view of Liedenbaum et al. (US 5,701,396).

Regarding claims 6 and 25; Tabuchi discloses all of the limitations of claims 6 and 25 as applied to claims 5 and 24 above, except for specifically stating that the semiconductor laser diode (2) is a gallium arsenide based semiconductor laser. Tabuchi is silent as to the specific type of semiconductor laser diode that is incorporated into the invention, thus suggesting to one of ordinary skill in the art that any well known type of semiconductor laser diode could be incorporated in the invention. Semiconductor lasers are typically formed from gallium arsenide to create light at

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wavelengths from 660-900 nm (see column 4, lines 42-56, of Liedenbaum et al.).

Therefore, one of ordinary skill in the art would have found it obvious to incorporate a gallium arsenide semiconductor laser diode in the invention of Tabuchi as the semiconductor laser diode (2).

Claims 11, 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabuchi (US 5,611,006).

Regarding claims 11 and 33; Tabuchi discloses all of the limitations of claims 11 and 33 as applied to claims 10 and 32 above, except for stating that the first split output specifically comprises a two percent portion of the first light beam output. Tabuchi is silent as to the specific portion of the first light beam output that forms the first split output, thus suggesting to one of ordinary skill in the art that the first split output could comprise any reasonable percentage or portion of the first light beam. One of ordinary skill in the art would have recognized the advantages of having a small portion of the first light beam output comprise the first split output, including allowing the package to transmit a larger percentage of the light, while using that small portion to monitor/stabilize the laser source (2), thereby causing minimal loss to the amount of light transmitted by the package. Therefore, one of ordinary skill in the art would have found it obvious to have the first split output be any small percentage of the first light beam output, including 2 percent.

Regarding claim 35; Tabuchi discloses all of the limitations of claim 35 as applied above, except for the method further comprising calibrating the photodetector by the processor. In general, processors are used to calibrate all emitters and/or detectors

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present in an integrated circuit in order to ensure that the system is performing at maximum efficiency. It is within the level of ordinary skill in the art to provide and/or use a processor to receive the electrical signal output from a photodetector and to use information from that electrical signal to calibrate the photodetector, as this is very elementary in the art. One of ordinary skill in the art would have found it obvious to calibrate the photodetector using a processor (in the form of an integrated circuit) that receives the electrical output from the photodetector and uses the information to calibrate the photodetector to ensure that the photodetector is aligned properly and is operating at maximum efficiency.

Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spaeth (US 6,021,238) in view of Kobayashi et al. (US 4,627,688).

Regarding claims 28 and 29; Spaeth discloses all of the limitations of claims 28 and 29 as applied to claim 22 above, except for the BSC comprising a polarizing BSC. In column 8, lines 6-20, Spaeth discloses that the BSC (14) is produced from known dielectric materials, including borosilicate glass, and that the beam splitter includes a dielectric material to create the first split output. Spaeth also teaches that the BSC is constructed in such a way that it allows a portion of the emitted radiation to pass through and that it reflects a portion. Kobayashi et al. discloses a polarizing beam splitter that is made of dielectric borosilicate glass (BK7) and that can be adjusted to have any desired ratio of transmitted to reflected light (see Figure 2; column 1, lines 9-16; and column 6, lines 25-60). Thus, one of ordinary skill in the art would have found it obvious to incorporate the polarizing BSC disclosed by Kobayashi et al. in the invention

of Spaeth in order to provide a BSC that can have any desired ratio or transmitted light to reflected light.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tabuchi (US 5,611,006) in vie of Ishikura et al. (US 5,920,420).

Regarding claim 31; Tabuchi discloses all of the limitations of claim 31 as applied to claim 30 above, except for specifically stating that the isolator element comprises bismuth garnet. Tabuchi is silent as to the specific type of isolator element employed in the invention, except for stating that well known methods are used to form the optical isolator, thus suggesting to one of ordinary skill in the art that any well known optical isolator can be incorporated in the invention. Optical isolators usually comprise of bismuth garnet (see column 1, lines 27-35, of Ishikura et al.). Therefore, one of ordinary skill in the art would have found it obvious to incorporate an optical isolator comprising bismuth garnet in the invention of Tabuchi.

Response to Arguments

Applicant's arguments filed January 11, 2006 have been fully considered but they are not persuasive.

Regarding the rejections of claims 1, 2, 5, 10, 14, 16-24, 30 and 32 under 35 U.S.C. 102(b) as being anticipated by Tabuchi (US 5,611,006):

Applicant states that the laser beam incident upon the edge incidence type photodiode chip 21 of Tabuchi is used for stabilizing the output of the laser diode chip 20. Applicant concludes that, as apparent from the cited section of Tabuchi

(column 8, lines 53-59) there is no description of at least “a photodetector being adapted to produce an electrical signal responsive to the received first split output to facilitate monitoring of the semiconductor light source”, as recited in claim 1.

First, the photodiode chip 21 of Tabuchi *inherently produces an electrical signal* responsive to the received first split output. Photodiodes receive optical signals and produce electrical signals responsive to the received optical signals.

Second, any signal that is received by a photodiode is *inherently monitored* when it is detected. Furthermore, Tabuchi clearly indicates that the received signal is used for stabilizing the laser diode chip (see column 8, lines 56-59; Figure 6; and column 9, lines 20-42). Stabilization of laser diode chips is a common practice in the art that involves monitoring the output of the laser diode chip with a photodetector, such as a photodiode, that produces an electrical output signal which is used to monitor the output of the laser diode chip and thereby provide the information necessary to stabilize the output of the laser diode chip. Monitor, in the present context, means to watch, keep track of, or check usually for a special purpose (see Merriam-Webster's Collegiate Dictionary, 10th edition, page 752, for this definition). The photodiode of Tabuchi *monitors* the received signal for stabilization purposes.

Third, it has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re*

Hutchison, 69 USPA 138. Furthermore, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPO2d 1647 (1987).

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding the rejection to claims 1, 5, 7-10, 12-15, 18, 22, 24, 26, 27 and 32 under 35 U.S.C. 102(b) as being anticipated by Spaeth (US 6,021,238):

Applicant states that the cited monitor diode (21) of Spaeth and the supporting portions of the specification do not show or describe the limitations of claim 1. Applicant concludes that the monitor diode of Spaeth does not include the capability to produce an electrical signal responsive to a received first split output to facilitate monitoring of the semiconductor light source.

First, the monitor diode (21) of Spaeth includes a radiation-detecting pn junction (see column 7, lines 51-59), which *inherently produces an electrical signal* responsive to the received first split output.

Second, any signal that is received by a photodiode is *inherently monitored* when it is detected. Furthermore, Spaeth clearly indicates that the diode (21) a monitor diode, by calling it a "*monitor diode*". Monitor, in the present

context, means to watch, keep track of, or check usually for a special purpose (see Merriam-Webster's Collegiate Dictionary, 10th edition, page 752, for this definition). Spaeth discloses that "the monitor diode 21 serves essentially to check the wavelength of radiation 7". Thus, the monitor diode 21 of Spaeth monitors or checks the wavelength of the received signal.

Third, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPA 138. Furthermore, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPO2d 1647 (1987).

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Applicant states that "it is noted that many other bases for traversing the rejection could be provided, but Assignee believes that this ground is sufficient" (see page 11, lines 17-18 of the Amendment filed January 11, 2006). Applicant does not provide additional bases for traversal of the rejections discussed above.

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It is beneficial to provide all bases for traversal of a rejection when responding to an Office action in order to expedite prosecution by allowing all of the issues concerning the rejections that are present in a case to be timely addressed in the following Office action.

Regarding the rejections to claims 3 and 4 under 35 U.S.C. 103(a) as being unpatentable over Spaeth (US 6,021,238) in view of Asakura et al. (US 6,496,623 B2); to claims 6 and 25 under 35 U.S.C. 103(a) as being unpatentable over Tabuchi (US 5,611,006) in view of Liedenbaum et al. (US 5,701,396); to claims 11 and 33 under 35 U.S.C. 103(a) as being unpatentable over Tabuchi (US 5,611,006); to claims 28 and 29 under 35 U.S.C. 103(a) as being unpatentable over Spaeth (US 6,021,238) in view of Kobayashi et al. (US 4,627,688); and to claim 31 under 35 U.S.C. 103(a) as being unpatentable over Tabuchi (US 5,611,006) in view of Ishikura et al. (US 5,920,420):

Applicant states that these claims are allowable because neither Spaeth or Tabuchi show or describe at least "a photodetector being adapted to produce an electrical signal responsive to the received first split output to facilitate monitoring of the semiconductor light source". The Examiner disagrees for the reasons discussed above.

Applicant states that the Assignee has serious doubts concerning the ability to combine the various references set forth in the above rejections. However, Applicant does not indicate what those serious doubts are.

It is beneficial to provide a statement of all evidence and/or information that Applicant/Assignee feels is pertinent to the particular combination of references applied to each claim in order to expedite prosecution by allowing all of the issues concerning the rejections that are present in a case to be timely addressed in the following Office action.

It should be kept in mind that applicant cannot, as a matter of right, amend any finally rejected claims, add new claims after a final rejection (see 37 CFR 1.116) or reinstate previously canceled claims. Except where an amendment merely cancels claims, adopts examiner suggestions, removes issues for appeal, or in some other way requires only a cursory review by the examiner. See MPEP 714.13 [R-3] and 37 CFR §1.116.

An affidavit or other evidence filed after a final rejection, but before or on the same date of filing an appeal, may be entered upon a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e). See 37 CFR 41:33 and MPEP § 1206 for information on affidavit or other evidence filed after appeal. See MPEP 714.13 [R-3] and 37 CFR §1.116.

Failure to properly reply under 37 CFR 1.113 to the final rejection results in abandonment. A reply under 37 CFR 1.113 is limited to:

- (A) an amendment complying with 37 CFR 1.116;
 - (B) a Notice of Appeal (and appeal fee); or
-

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(C) a request for continued examination (RCE) filed under 37 CFR 1.114 with a submission (i.e., an amendment that meets the reply requirement of 37 CFR 1.111) and the fee set forth in 37 CFR 1.17(e). RCE practice under 37 CFR 1.114 does not apply to utility or plant patent applications filed before June 8, 1995 and design applications. Further examination of the application may be obtained by filing a continued prosecution application (CPA) under 37 CFR 1.53(d), if the application is a design application. See MPEP § 201.06(d). Effective July 14, 2003, CPA practice does not apply to utility and plant applications. An amendment filed at any time after final rejection, but before an appeal brief is filed, may be entered upon or after filing of an appeal brief provided the total effect of the amendment is to (A) remove issues for appeal, and/or (B) adopt examiner suggestions. See MPEP 714.13 [R-3] and 37 CFR §1.116.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.



Michelle R. Connelly-Cushwa

Patent Examiner

March 22, 2006